



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,483	12/31/2003	Ulrich Bonne	H0006074-0760(1100.123310	9843

128 7590 09/28/2006

HONEYWELL INTERNATIONAL INC.  
101 COLUMBIA ROAD  
P O BOX 2245  
MORRISTOWN, NJ 07962-2245

EXAMINER

DOLE, TIMOTHY J

ART UNIT	PAPER NUMBER
----------	--------------

2858

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,483

Applicant(s)

BONNE, ULRICH

Examiner

Timothy J. Dole

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 and 16-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims 6-15 drawn to an invention elected without traverse, making the restriction/election final. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Vojak et al. (US 2002/0113553).

Referring to claim 6, Vojak et al. discloses an ionization sensor comprising: a first electrode (fig. 1A (14)) having a first plurality of prongs (fig. 1A (prongs 14b extending from the left electrode, 14)) situated approximately in a plane (fig. 1A); a second electrode (fig. 1A (14)) having a second plurality of prongs (fig. 1A (prongs 14b extending from right electrode, 14)) situated approximately in the plane (fig. 1A) and proximate to the first plurality of prongs to form a plurality of electrical discharge gaps between the first and second electrodes (fig. 1A and paragraph [0014]); and a channel (fig. 1A (16)), wherein the first and second electrodes are substantially contained within the channel (fig. 1A).

Referring to claim 8, Vojak et al. discloses the sensor as claimed wherein the channel is a fluid flow channel (paragraph [0014]).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vojak et al. in view of Wentworth et al. (US 5,153,519).

Referring to claim 9, Vojak et al. discloses the sensor as claimed except for a spectrometer optically coupled to the plurality of electrical discharge gaps.

Wentworth et al. discloses an ionization sensor comprising a spectrometer (fig. 1 (40)) optically coupled to the plurality of electrical discharge gaps (column 6, line 27-34).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the spectrometer of Wentworth et al. into the sensor of Vojak et al. for the purpose of more accurately detecting the discharge by making it possible to analyze the system both during and after the spark (abstract).

Referring to claim 10, Vojak et al. discloses the plane is approximately parallel to a fluid flow direction of the channel (fig. 1A and paragraph [0014]).

Referring to claim 15, Vojak et al. discloses the sensor as claimed except for a processor connected to the spectrometer.

Wentworth et al. discloses a processor (fig. 1 (41)) connected to the spectrometer.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the processor of Wentworth et al. into the sensor of Vojak et al. for the purpose of recording the output of the spectrometer with respect to time (column 6, lines 34-36).

6. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vojak et al. in view of Wentworth et al. as applied to claim 9 above, and further in view of Wiegand, Jr. (US 3,657,600).

Referring to claim 11, Vojak et al. as modified discloses the sensor as claimed except for a third electrode situated approximately in the plane and proximate to the first and second electrodes; and a fourth electrode situated approximately in the plane and proximate to the first and second electrodes.

Wiegand, Jr. discloses an ionization sensor comprising a first electrode (fig. 3 (12)) situated approximately in a plane (fig. 3); a second electrode (fig. 3 (14)) situated approximately in the plane (fig. 3); a third electrode (fig. 3 (16)) situated approximately in the plane and proximate to the first and second electrodes (fig. 3); and a fourth electrode (fig. 3 (20)) situated approximately in the plane and proximate to the first and second electrodes (fig. 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the electrodes of Wiegand, Jr. into the sensor of Vojak et al. as modified for the purpose of providing an improved discharge (column 3, lines 5-11).

Referring to claim 12, Vojak et al. as modified discloses the sensor as claimed except wherein an A.C. voltage supply is connected to the first and second electrodes; and a D.C. voltage supply is connected to the third and fourth electrodes.

Wiegand, Jr. discloses an A.C. voltage supply (fig. 3 (28)) is connected to the first and second electrodes (fig. 3); and a D.C. voltage supply (fig. 3 (22)) is connected to the third and fourth electrodes (fig. 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the electrodes of Wiegand, Jr. into the sensor of Vojak et al. as modified for the purpose of providing power to the electrodes to provide an improved discharge (column 3, lines 5-11 and column 4, lines 8-15).

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vojak et al., Wentworth et al. and Wiegand, Jr. as applied to claims 11 and 12 above, and further in view of Pompei et al. (US 4,016,524).

Referring to claim 13, Vojak et al. as modified discloses the sensor as claimed except wherein first and second electrodes have a dielectric coating.

Pompei et al. discloses an ionization sensor wherein first and second electrodes have a dielectric coating (column 2, lines 17-20 and 32-41).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the dielectric coating of Pompei et al. into the sensor of Vojak et al. as modified for the purpose of insulating the electrodes from moisture, whereby leading to more accurate results (column 3, lines 36-45).

Referring to claim 14, Vojak et al. as modified discloses the sensor as claimed except wherein the third and fourth electrodes have no dielectric coating.

Wiegand et al. discloses the third and fourth electrodes have no dielectric coating (fig. 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the uncoated electrodes of Wiegand, Jr. into the sensor of Vojak et al. as modified for the same purpose as given in claim 11, above.

### ***Response to Arguments***

8. Applicant's arguments filed July 17, 2006 have been fully considered but they are not persuasive.

9. In response to the Applicant's argument with respect to claim 6, that Vojak et al. does not disclose that the first and second electrodes are substantially contained within a channel, it should be noted that these limitations are disclosed in the rejection, above. Vojak et al. discloses (fig. 1A) that portions of the first and second electrodes are contained within a cavity, which is considered to be the claimed channel. If the electrodes of Vojak et al. were not contained within the channel, the microdischarge device would not provide any discharge, and the device would not work. Since the device will not function properly without the portions of the first and second electrodes being contained within the channel, the portions of the electrodes in the channel are considered to be substantial. Therefore, the first and second electrodes of Vojak et al. are considered to be substantially contained within the channel, as claimed.

### ***Conclusion***

Art Unit: 2858

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Dole whose telephone number is (571) 272-2229. The examiner can normally be reached on Mon. thru Fri. from 8:00 to 4:30.

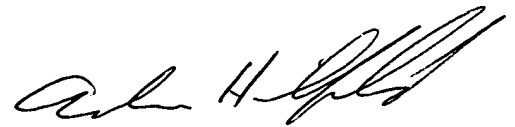
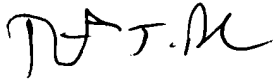
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2858

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJD



**ANDREW H. HIRSHFELD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**